

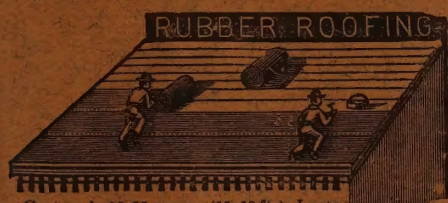
THE POULTRY MESSENGER

& WESTERN FRUIT-GROWER.

Vol. 1.

AURELIA, IOWA, MAY, 1895.

No. 3.



RUBBER ROOFING
Costs only \$3.25 per sq. (10x10 ft.) Lasts a life time on Steep or Flat roofs. Ready for use. Any body can apply it. Illustrated book free if you mention this paper. Write at once to 143 Duane St. N. Y. City.
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FOR HEN HOUSE OR SHED.

On steep or flat surface. Excellent Roof complete, \$2.00 Per 100 Square Feet. Send stamp for sample and state size of Roof.

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Is a profit to owner unless it is well housed and properly cared for. A **WATER TIGHT ROOF** is more important than shell, condition powder, or even fancy wire fence. **RUBBER ROOFING** will enable a hen to do a full days work, and if you line the inside of the building with our Sheathing Paper, there will be no draft. Send for catalogue.
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From **FIRST-CLASS**

Buff Cochins,
Black Minorcas,
B. Plymouth Rocks.

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Eggs \$1.50 per 13—satisfaction guaranteed. Express paid on two sittings in one order.

Bayne & Co.
Warren, Illinois.

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Plymouth Rock.

Its Remarkable Popularity, and a Few of the Reasons Which Have Given Rise to It.

A 12-PAGE PAMPHLET

For advertising purposes. Price \$1.50 per hundred. Send one cent stamp for sample.

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Manufactured by
DEKALB FENCE CO., DEKALB, ILL.
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T. C. CREPPS,

Breeder of

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No better stock anywhere. Write for description and prices.

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DURABLE FIREPROOF ROOFING. NO TAR USED

It is superior to any other roofing and unequalled for House, Barn, Factory or outbuildings; it costs half the price of shingles, tin or iron: it is ready for use and easily applied by anyone; it is the best roofing in the market, in durability, to all others. Send for estimate and state size of roofing.

Send For Samples. **RUBBER PAINT** No Tar Used.

The best known paint in the world for tin, iron or shingle roofs, fences, sides of barns and outbuildings; it costs only 60 cents per gallon in barrel lots, or \$4.50 for a 5-gallon tub. Color, dark red. It will stop leaks in tin or iron roofs that will last for years. It is guaranteed not to peel, crack, scale or wash off, and is fire-proof against sparks. **TRY IT.**

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The best of everything in the line of nursery stock at

Hard Times Prices.

I am prepared to fill orders for fruit trees in any amount, blackberry raspberry and strawberry plants,

EVERGREENS and FOREST TREES.

And, in fact, everything which can be supplied by any first-class nursery.

Write for Price List,

Or call at nursery two miles east, and two and a half miles south of Cherokee, Iowa. Address

Pilot Rock Nurseries,
Cherokee, Iowa.

A Good Hatch,

What Constitutes It, and some of the Most Ready Means of Obtaining It.

The above is the title of a little 16-page pamphlet of a suitable size for enclosing in an envelope. Every breeder who sells eggs for hatching purposes needs it. It anticipates many of the complaints which are received by this class of poultrymen. The book is simply a talk with those who purchase eggs about what they can reasonably expect in the way of a hatch. By sending out one of them with each shipment of eggs breeders will save themselves much correspondence, and an endless repetition of explanations regarding the small imperfections which will crop out in the best of stock. Those who have lately received a package of them say:

"I think they are just the thing for every poultryman."

"I would not be without them for double what they cost."

The pamphlets are delivered to purchasers postpaid for \$1.50 per hundred. Send stamp for specimen copy. Address

THE MESSENGER CO.
Aurelia, Iowa.

Paragon Black Langshans

Eggs \$2 per sitting of thirteen.
Two sittings for \$5

From the Choicest Breeding Stock.

A. L. BELEW, Aurelia, Iowa.

BUFF WYANDOTTES, —AND— White-Crested Black Polish

I have some very fine, vigorous fowls of these two grand breeds, mated for best results. Orders booked now for eggs at following prices:

Buff Wyandottes.

1 Sitting, \$2.00; 3 Sittings, \$4.00.

W. C. Black Polish.

1 Sitting, \$1.50; 3 Sittings, \$3.50.

One Sitting of each breed \$3.00. Orders filled in rotation as received, and shipped as soon as weather will permit. P. D. WINE, Aurelia, Iowa.

PERFECTION BLACK RASPBERRY.

The latest and finest raspberry out. Picked in fruit the past season over \$20 to the row on yearling vines. Gregg, Palmer, and other varieties produced less than \$5 to the row, same length and age. Very early, sold for 5c. per quart more than later varieties. Perfectly hardy, immensely productive; stood drouth and cold the past two seasons when all old sorts failed. To get them thoroughly introduced I offer them delivered to you for \$1 a dozen. Try a few. Send for my price list of all leading small fruits, novelties and ornamentals.

20 Varieties of Seed Potatoes

At low prices. An early order will secure Perfection raspberries—they are limited. Everything first-class and low prices. Strawberry, raspberry and blackberry plants a specialty. Mention Messenger when writing.

A. J. NORRIS, Cedar Falls, Iowa.

Barred Plymouth Rocks,

AND

POLAND-CHINA SWINE.

For fine appearance, vigor and all the best qualities of the Plymouth Rocks, I believe my flock is the equal of any. I keep Plymouth Rocks exclusively, and have been a breeder of them for ten years. Eggs \$1.25 per sitting; two sittings for \$1.75.

Gilts For Sale

Twenty choice gilts for sale sired by Hatfield's Choice 19771 he by Black U. S. 18345. Gilts bred to either of the following boars: U. S. Directum and Dandy Directum sired by Directum 23847 or Sensation C sired by Sensation F 23111. T. C. CREPPS, Aurelia, Iowa.

Standard Buff Leghorns.

I want every person interested in this popular and beautiful breed to send for our large 4-paged '95 circular, free, stamp accepted. I have one of the finest flocks and prize winners, scoring 94½ by Felch to 93½ by Drevenstedt. Also,

Black Javas, and Columbian Wyandottes.

Get my circular sure

(Box 18)

GEO. S. BARNES,

Battle Creek Michigan.

FOR SALE!

30 Plymouth Rocks

Which I will sell cheap for the next 30 days with score card. I also breed

DUROC JERSEY HOGS.

I have a few fall pigs which will be ready to ship next May,

DAVID NAUMAN, West Liberty, Iowa.

THE POULTRY MESSENGER

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IT WILL NOT PAY.

It will not pay to keep chickens in large flocks of two or three hundred as is often done on the farms. The farmer who obtains the eggs and poultry which are used on his table in that way pays a high price for them. He could get them at less expense by going to the nearest market and paying the cash for them.

It costs something to raise and feed poultry, no matter how it is raised or fed. The fowls may be allowed to roam at will and pick up their living as best they can, but for all that they do not come up without expense to somebody. If the food which they require is not given to them, they pilfer it, if it is anywhere accessible to them, and it nearly always is about the fields and buildings of a farm. This is an expensive way to feed chickens. They destroy about as much as they consume, and, besides, they are very liable to manifest a desire to feed upon things which were never intended for their use.

One hundred hens are double the number which ought to be allowed in any one flock. A well informed poultryman would not think of permitting more than twenty-five birds to occupy one house; but for the purposes for which poultry is commonly kept on the farms we believe a flock may contain one hundred birds, and yet be kept at a profit. But that number should be the limit. We do not believe it is possible to crowd more than that into the same quarters without making the eggs cost the owner more than he could buy them for on the open market.

Poultry can be brought up very cheaply on the farm, and no where else can it be given quite the same chance to attain its best development. And yet the scrubbiest specimens of the feathered race to be found anywhere we see on the farms. It has been brought to this by promiscuous matings and large flocks. Such poultry is not profitable, we care not how it obtains

its living. The wonder is that anybody at this day will continue to keep poultry in that way.

IT'S A BUSINESS.

A vast amount of disappointment would be saved if people could be made to understand that poultry keeping is a business. There is quite a large-sized "know-how" to it, and people must go through the process of learning it the same as any other business before they can successfully engage in it on a large scale. If one has the patience and determination, and, we will add, the intelligence, to succeed in it, he can obtain the necessary knowledge by caring for a small flock at first, and then enlarge the number of his charges from year to year as he becomes fitted for engaging in the business in a more extensive way. A person who has become seriously afflicted with the "chicken craze" as a consequence of reading about the large profits to be made from poultry keeping will try to convince himself that there is a nearer way to success in that line than the one which we have indicated. But disappointment and disaster will certainly follow if he undertakes to make a beginning in any other way. The poultry books and periodicals will be of great assistance to him—indeed there will be no success worthy the name without them—but though helpful, they will come far short of supplying him with the practical knowledge which he needs. He must have the actual experience of the poultry yard—its perplexities, its failures and its triumphs, in order to come out successful in the end. Only a small proportion of those who start in this pursuit with "great expectations" have the patience to remain in it long enough to gain the experience by which they can make it profitable. They give way to discouragement over the unlooked for losses which they meet with, and are soon ready to abandon an occupation which has been an altogether unfortunate venture to them solely be-

cause they lacked the knowledge to make it otherwise.

THEY MUST HAVE GRIT.

One of the principal drawbacks to successful poultry raising is the lack of sharp grit. The importance of the grit is not as well understood as it should be. Because the hens can live without it it will not be believed that they cannot be at their best if it is withheld from them. When the fowls have full liberty they are generally able to pick up enough of it to answer their needs, but when shut up in yards it should always be supplied to them. If nothing more is done for them in this way, empty the coal ashes and cinders in their runs. While this is a very imperfect substitute for good, sharp grit, it is better than nothing. Grit is only second in importance to the feed. Many of the fowls which sicken and die have simply fallen victims to indigestion, and the indigestion was due solely to the want of sharp grit. A prominent authority on poultry culture, a writer whose opinions command respect everywhere among poultrymen, recently expressed the belief that more fowls are lost as the result of being deprived of sharp grit than from any other cause.

If you are in need of a pure bred male of any breed for the next season, the time to begin correspondence with a view to obtaining what you want is at the end of this month. After the middle of June most breeders will do no more hatching, and nearly all of them have finely bred roosters which they will dispose of for a sum much below their actual value. The same kind of a bird next winter will cost you more than double what it can be obtained for at the time above named.

The partridge, quail, woodcock and snipe are all dark-legged birds, and yet nobody claims that their flesh is inferior to the popular yellow-legged chickens of America.

THE SCALY LEG.

No matter how well the hens may be cared for during the winter, indications of the scaly leg are apt to make their appearance on some of the fowls in the spring. The breeds with feathered legs are more subject to this disease than those with bare legs. The scaly leg is one of the easiest things in the world to overcome if taken in time, but if neglected until it reaches its worst stages no kind of treatment will entirely remove its traces from the legs of the fowls. As the consequence of such neglect, we have seen the legs of a pen of chickens in such a diseased condition that it seemed an almost hopeless task to undertake to effect a cure. Reddened and swollen tumors extended from the hock to the foot, the leg being enlarged to two or three times its natural size. Except when treatment is undertaken as a matter of experiment, it is better to destroy a hen in this condition rather than undertake to cure her. The scaly leg does not usually reach this stage. Ordinarily the worst feature of the disease is a badly roughened and encrusted condition of the legs and feet, occasioning no actual injury to the fowl further than an ugly disfigurement attended, perhaps, by an awkward gait or slight lameness.

About as good an application for this disease as anything is an ointment composed of equal parts of lard and kerosene. We have seen the kerosene alone recommended, but we think it is a cruelty to make such a painful application to these diseased surfaces. We have seen it stated, too, that poultrymen who have applied the raw kerosene have thereby lost a large part of their flocks, the fowls first losing the use of their legs and dying within a few days. But while regarding the undiluted kerosene as unfit for this purpose, as we have said, we do not believe that such serious consequences as these are likely to follow its use except in the most advanced stages of the disease.

To do a thorough job, the feet and legs should be first washed with soap and warm water, and dried, and the kerosene and lard then well rubbed into the uneven surface with a stiff brush or a swab. This operation should be repeated once a week for a month. After that an occasional dressing, say three or four times a year, will be all that is needed to prevent a return of the disease. Scaly leg is easily prevented, and there is no excuse for having it in any flock.

SETTING HENS, GOOD AND BAD.

The setting hen ought to come off her nest every day, except when she is hatching. It is believed by some people that a setting hen cannot stick too closely to her nest—that if she does not leave it oftener than once in two or three days, it is an evidence that she is a valuable bird for this purpose, and is much to be preferred to one which does not give the same close attention to her duties. Such a hen is expected to be rewarded with a better hatch than the average, but this is by no means likely to follow.

All things being equal, the hen that leaves her nest every day for the purpose of taking food and water, and treating herself to the dust bath, is the one that will hatch out the largest per cent of the fertile eggs. The eggs are the better for the airing thus given them, and, besides, a more uniform temperature is imparted to them as the result of this regularity of feeding. We have known people to adopt the practice of spreading a woolen cloth over the eggs while the hen was off the nest, thinking that they thereby prevented chilling and increased the chances of a good hatch. Such a proceeding is not to be recommended. In fact, there are good reasons for believing that it does harm rather than good. The eggs will not suffer any injury in consequence of this short interval of exposure. Nature has provided against that. It cannot be doubted that the ventilation which is thus given them is one of the necessary conditions of a good hatch.

A flock of twenty hens can be kept for five cents a day, and kept in the very best condition. This is the most that a flock need cost when every particle of food they consume has to be purchased. In most cases fully half of the feed for twenty hens can be made up of the waste from the family kitchen.

The snappish, cross-grained old hen will take better care of her brood, and in nearly every respect will be a better mother, than one of a perfectly mild and peaceable disposition. She is in the world for the purpose of fighting her way through it, and don't ask any favors. She will bring her brood safely through difficulties and dangers which would prove too much for a hen of less spirit. This crabbed old hen, that tells you plainly to keep your distance or take the consequences, is entitled to your respect. Take off your hat to her.

MAY AND JUNE HATCHES.

Your layers for next winter should be hatched this month, if possible, and if you keep the larger breeds, it would have been better if they had been hatched in April. But we do not blame people who do not make a business of poultry-keeping, and who have only ordinary conveniences for taking care of young chickens, for not hatching them earlier than May. It is no small task to properly care for a lot of the small fry during the damp, chilly weather which we are liable to have all through April, and unless one is well fixed in the way of shelter for them the losses are sure to be discouragingly heavy. Most poultry-raisers will do well enough if they succeed in bringing out their chickens in May, or not later than the 10th of June. Any of the medium sized breeds which are hatched within this period will attain sufficient size to begin laying by the first of December. It is a singular thing to relate, but the best lot of winter layers which we have known anything about during the past year were hatched last June, and after the middle of the month too. But we are not advising people to put off their hatching until that time. The fact is only alluded to for the purpose of showing that in this, as in everything else, excellent results sometimes follow when things are done outside of the regular rules, and contrary to the established practice.

SMALL FEEDERS NOT GOOD LAYERS.

The poultryman should occasionally go through the coops at night and feel of the crops of his hens. It will be found that while all of the occupants of the yard have an equal chance at the feed, there is quite a difference in the amount appropriated by the various individuals of the flock. Some of the crops will be full, while others will contain scarcely a spoonful of food. As a rule, it will be found that those hens which are the best feeders, are the best layers. The small feeders are invariably poor layers. They are either out of health, or are of such a stolid, indolent habit that they do not rush in and secure their share in the scramble at the feed trough. A hen that is not a hearty feeder cannot be a good layer. Eggs cannot be produced unless egg-making material is taken into the system in liberal quantity. The time will be well spent in finding out which are the poor feeders, and sifting them out of the flock.

CULL THEM OUT.

All poultry keepers who are at all given to the practice of closely observing the habits of their fowls, know that it is next to impossible to get a coop of twenty hens together in the fall without having some of them show some objectionable traits before the close of the winter. He may go through the young stock he has on hand and exercise the greatest care in the choice of birds for his winter coops, but while so doing he is conscious of the fact that he will give some a place in the houses which he will afterwards wish he had left out. "Appearances are sometimes deceitful"—yes, this is true with chickens as well as with people. A very promising young hen, so far as appearances go, will often turn out to be utterly worthless. About the time that the day of her usefulness should begin she will show some glaring defect, or will fall into some ugly habit, which makes her anything but a desirable tenant of the poultry house. But as the fault may not be of such a nature as to call for her immediate destruction, the owner lets her remain, fully intending to get rid of her before the hatching season begins. But in the rush of work at this time this is often forgotten, and the hen is allowed to stay in the coop and transmit her faults and vices to the flock of the succeeding year.

If the hen is an egg-eater or a feather puller, she should be killed as soon as that fact is discovered. No poultryman of experience will be in doubt for a moment as to the right course to pursue with a hen that becomes addicted to either of those vices. But her fault may be of a more trivial character than this, and yet is something which no poultryman would want to see perpetuated in his flock. It may be that the hen has proven to be a poor layer, and that is the only charge which can be alleged against her. But what is the use of having hens which are poor layers when with a little extra trouble, and no extra expense, one can just as well have hens which are good layers.

The bulk of the poultry in the north will be hatched this month. Every poultry owner has some birds in his flock which he knows are given to some bad traits, or are in some way below the general average of his stock. Get rid of these hens at once, or at least separate them from the flock which is to supply your eggs for hatching purposes. You pursue this plan with regard to every other kind of stock on

the place. Don't make an exception when it comes to the chickens. There is not a particle of sense in keeping a hen on hand which is fitted for nothing on earth but hatching out disappointment and trouble for the person who feeds and shelters her.

NO NEED OF NEW BREEDS.

New breeds of poultry are not to be classed among the pressing needs of the world at present. There are breeds enough to answer every purpose. The time spent in originating new breeds would be better employed if devoted to improving those already at hand.

Probably half the people who engage in the poultry business have an ambition at some time in their lives to become the originator of a new breed of chickens. Men who have not had an experience extending over two or three seasons, and whose judgment in regard to any of the standard breeds would be next to worthless, are seized with a longing to introduce a new breed to the world which will surpass in good qualities any and all of those already in existence.

The most of people who are employing their energies in this way are simply wasting their time. Not one of them in a thousand will ever succeed in producing anything in the way of a new breed which will be of the least profit to him. Any new breed which might be introduced at this day would need to possess distinguishing qualities of a very superior order to attract more than a passing notice from the poultry-keeping public. Old and experienced breeders understand this, and are not giving their time to that kind of unprofitable work.

As we have said before, there is plenty of room for improvement in the old breeds. The very finest of them can be made better in some respects. Let the class of people above alluded to lay aside their ambition to produce a new breed and devote their talents to this object. If they can succeed in this—if they can go to the poultry shows and place on exhibition a coop of any of the standard breeds which are conspicuously better than the average of good birds of that breed, the time and labor which they have given to that object will not go unrewarded. He who can do this will have a demand for his fowls greater than he can supply, and any one naturally fitted for this kind of work, and possessing a persevering and industrious disposition, can achieve a

large measure of success in this line. But he will not reach this success by dividing his attention between a dozen or more breeds. The way for him to proceed is to select just one breed, and devote all of his labors to that alone. It matters very little which breed he makes choice of, his chances are almost equally good with any of them. Here is the opportunity for everyone who has a mind to exert himself in this direction to accomplish something in the way of practical results. So far as profit is concerned, the production of an entirely new breed is not to be compared to it.

POULTRY GROWING.

Nothing shows more clearly the as yet undeveloped condition of the poultry interests than the fact that each winter Canada sends us vast quantities of eggs, and did, even when the Canadian hen had to contribute at the rate of two cents per dozen for the privilege of selling her eggs in this market. We say that it is too cold in the north for hens to lay in winter. Canada is a still colder country. It is a kind Providence or a more enterprising farmer that keeps the Canadian hen house up to a laying temperature when the temperature falls below zero. We will never admit that the stars and stripes—Old Glory—floats over a hen of less intelligence than does the Union Jack. The trouble lies neither in our hens nor in our flag, nor yet in our climate, but in ourselves. If we but give our wives a chance, they will give the hens a chance, provided we give the wife the profits. Try it this year of grace and good resolutions and see if with a liberal investment in improved breeds, the hens do not cackle to the great profit of the family in January, 1896.—Wallace's Farm and Dairy.

Every poultry-keeper should grow some sunflower seed if he has any land which he can possibly spare for that purpose. A very small piece of ground will produce enough of the seed to answer the ordinary poultryman's needs. There is no doubt of the fact that sunflower seed can be fed to chickens with considerable benefit, but the mistake must not be made of giving it to them too freely. A good handful twice a week is sufficient for a yard of twenty hens. It imparts a smoothness and lustre to the coat which cannot be so easily obtained in any other way.

No fowl will do as well in confinement as the Brahma.

A BAD DISEASE.

We hear of a number of poultry-keepers whose flocks are troubled with swollen heads. The hens linger along in this condition for several weeks and then die. They invariably die, in spite of all that their owners do to keep them in the land of the living. Personal acquaintances whose flocks are in this plight want to know what ails them. These fowls have got the roup, and have got it bad. It was brought about in the first place by exposure, but has now reached a stage where it is contagious, and any chicken which is housed with the affected ones is liable to take the disease. Some people claim that they can cure the worst cases of the roup. We doubt this, but even if it were true, it would hardly pay to do it. Under any treatment it must take a good while to completely eradicate the disease from the system, and meanwhile the hen is returning no profit to her owner. A large part of what should be the most useful period of her life is gone before she can be restored to a healthy condition. The majority of poultrymen agree that the best thing to do is to kill every hen which exhibits a rousy head in the poultry house in the spring. By so doing you will prevent the disease from becoming fastened on others not yet affected.

NOT NON-SETTERS.

Strictly speaking, there are no non-setting breeds. The Leghorns and several other of the smaller breeds are commonly spoken of as non-setters, but a considerable proportion of Leghorn hens will show a disposition to set in their second or third year if given free range, and allowed to exist under natural conditions. But it is a rare thing to see a Leghorn pullet show any tendency to broodiness. People who buy Leghorn eggs for hatching purposes are sometimes led to doubt if they have obtained stock of pure blood because they afterwards find broody hens in their flocks. This is no sign that the eggs which were sold to them were not what they were represented to be. People who have bred the Leghorns for many years tell us that they have some hens in their flocks every year which want to set, and when allowed to do so they attend closely to their duties and make capital mothers.

The yearly egg-product of a good hen should be that of three times her own weight.

SUCCESS WHICH LEADS TO LOSS

It is a possible thing for a person to be deceived in regard to what he knows about poultry keeping. People are often very sure that they perfectly understand how to attain certain results, and find out at a later period that they really didn't know what they thought they did. Sometimes an inexperienced, and even a careless poultryman, will blunder upon the right way of doing a thing, and for a time have surprising success with his chickens. But if he does not know how to profit by this good luck it will not always remain with him. It may even be the means of overwhelming him with misfortune. In illustration of what we mean we will imagine a case:

A man is seized with the hen fever, and for the first time in his life provides himself with a flock of chickens. He fits up a coop which in every particular is all that any flock of chickens could desire, and starts out with the resolve to give his fowls every attention which they ought to receive. He is well read up on poultry culture, but realizes that all of his knowledge in regard to the matter is of the theoretical kind, and he is a little uncertain about making a success of the venture the first season. But as winter comes on his hens begin to lay, and they keep steadily at it all through the cold weather. His success is far beyond his calculations, but he concludes that he has mastered the difficulties which he has heard so much about, and may hereafter engage in poultry-keeping on any scale that he has a mind to without any misgivings as to the results. And, encouraged by his good luck, he goes to heavy expense the next season in putting up accommodations for a dozen or more flocks. Perhaps he is not able to assume this expense, but he is so sure of his returns that he feels that he is justified in taking the risks even though he is obliged to go in debt for the improvements. The houses are stocked in the fall, the hens are as nearly as possible given the same attention which those of the previous season received, and the owner confidently awaits the harvest of eggs. But the eggs don't appear. As the winter closes in and only an occasional egg is found in the nest boxes, he begins to get a little anxious and worried, but he still keeps up a kind of a whistling courage, and hopes for better things a little later on. But in due time the winter is spent and his hens have not laid enough of eggs to pay for

a quarter of the feed which they have eaten. Our friend has been taught a lesson, and he is fortunate if it has not left him too poor to profit by it. Truly "experience is a dear school," but men will learn in no other.

People cannot learn in one season how to handle poultry successfully. They cannot learn how to be uniformly successful in obtaining winter eggs in that length of time. We wish we could impress this fact upon every one who has poultry-keeping in contemplation as a business. A beginner may have astonishing success with his chickens the very first year, but he had better heed the word of those who tell him that such success is purely accidental, and that he cannot count upon a continuance of it until he has obtained the knowledge which can only be his through experience. If he refuses to do this the day of his grief will surely come. Every old poultryman knows what we here say is true. And the most of them first learned it from a taste of the kind of experience above described.

If bran and meal are to constitute the breakfast of the fowls, be sure that it is not given to them in a clammy or pasty condition. The continued use of food in a sticky state is sure to be followed by bad results. Just moisten the mixture enough to make it loosely stick together. Crumbly is the word; let the person who does the mixing make sure that he understands exactly what that means.

If the chickens are allowed to roam at will, reduce the grain ration now that they can pick grass and other green stuff. It will be all the better for the fowls if they are given but a very small allowance of grain during the summer. The usefulness of the majority of flocks is lessened by being fed too much grain in summer, and it is generally because it is more convenient to feed the grain than a mixed ration.

The man with ill arranged, tumble down poultry houses, who cleans out the houses perhaps twice a year because the manure is wanted for the garden patch, who feeds and waters his fowls whenever he thinks of it, and often does not think of it for two or three days at a stretch, this is the man who is dead sure that there is not a grain of truth in all this talk about there being money in the chicken business. There is no money in it for him, and it follows as a natural consequence that there is none in it for anyone else.

THE HEAD LICE.

The large head lice cause the death of many young chickens, and in many instances the owner has not a suspicion as to what it is that has done the work. A brood will to all appearances be in the best of health one day, and the next morning several of them will be found dead. There is nothing to show that they had met with any violence, and the owner sometimes finds it difficult to make up his mind as to what has caused the loss. It is pretty certain that the mystery will be revealed if he will take up one of the chicks and make a close inspection of the feathers about the head and neck and under the wings. When our young chicks drop down in this mysterious way we always suspicion that they have lice, and our suspicions in regard to the case are usually correct. But a person need not be in any doubt. If an examination is made the lice can easily be seen, if that is what is at the bottom of the trouble.

We have nothing better to recommend for ridding the chicks of these pests than the application of a mixture composed of kerosene and lard. Now we know that some people are dreadfully opposed to the use of kerosene for this purpose, contending that it endangers the life of the chick, and that the lard alone is all that is required to destroy the lice. We are convinced that the kerosene does sometimes kill the chick. We are of the opinion that the mixture cannot be used of sufficient strength to accomplish the end in view without having a fatal effect upon some of the weaker ones of the flock. But our experience is that these lice cannot with any certainty be destroyed by the use of the lard alone, while the addition of a few drops of kerosene does the business effectually. We prefer to take the chances of immediately losing a small per cent of the chicks rather than have a larger number die later on in consequence of the failure of a milder application to end the career of the lice.

In preparing this mixture use just enough of the kerosene to give it the scent of the oil. From three to five drops to a table spoonful of the lard is sufficient. One application of this to the parts of the chick where the lice collect will usually be sufficient. The second dose will seldom be necessary if proper pains have been taken with the first. It should be well rubbed in the head and neck, under the wings, and about the vent, care being taken to use

no more of it than is required to lightly coat these surfaces.

If any of our readers know of any better method than this of ridding young chicks of lice we would like to hear of it. The above is a tedious process, and poultry-keepers would gladly abandon it for something different.

CHICKENS AND RATS.

The chicken business will not thrive on premises which are overrun with rats, and it will not do to depend altogether upon the cats to keep them clear of these pests. Even though the cats should be the best of their kind, and score close up to a hundred points, the rats will multiply in spite of them if the arrangement and construction of the buildings are such as to afford them numerous secure places of retreat.

In putting up new outbuildings on the farms harbors are often needlessly made for the rats. The corn cribs and grain bins are generally so located and arranged as to afford them no place of concealment, but the same care and forethought are not observed with respect to the other buildings. And then heaps of old lumber or fencing material are always to be seen on the farm, and if they are allowed to lie for a year undisturbed they give even a safer shelter to rats than a building does. A weasel may also be tempted to locate in such a place if one happens to be tramping through the neighborhood on the hunt for comfortable lodgings. These things are necessary on the farm, and it is not to be expected that the man with his hands full of farm work can be continually overhauling piles of rubbish solely with a view to breaking up the haunts of the rats. On the farm where poultry-keeping is to be given special attention, however, the fact should be kept in mind that the presence of rats is always a serious menace to successful poultry culture, and as far as it can be conveniently done, their harbors should be invaded and destroyed. And if new buildings of any kind are to be erected on the farm, they should be made free of hiding places for rats.

A GOOD TIME TO SELL.

Any surplus old stock which the poultryman may chance to have on hand generally sells at a good price in the markets at this time of year. If it is proposed to nicely fatten the stock before shipping do it as quickly as possible by giving a liberal quantity of soft

feed composed of corn meal and cooked potatoes in addition to whole grain. It does not always pay for the shipper to go to the trouble to put the birds in prime condition, as the writer has often found out to his cost. The returns of the average commission merchant will usually be about the same for two coops of chickens one of which has been carefully fattened, and the other in only the ordinary condition in which well-kept fowls are usually found. Find out if the market to which you ship is willing to pay for nicely fatted fowls, and if not, save yourself that trouble and expense. There is no obligation resting upon you to put them in that condition for nothing.

MAKE CHANGES CAUTIOUSLY.

All experienced poultry keepers who have followed some general plan in the management of their setting hens which has been fairly satisfactory to them, will take considerable risk if they decide to lay it aside and follow what they deem a better plan devised by some one else. Our advice to breeders is not to make such changes except in a gradual way. Stick to the old methods, if they have proven good, until you have demonstrated by careful experiment that you have found something better. The editor of the MESSENGER has described his method of treating his setting hens, but we would not have any reader adopt that method if he is meeting with good success with one of his own. No two people can manage their poultry according to the same rules and meet with the same results. We cannot meet with satisfactory results by following the methods of our nearest neighbor, though conscious of the fact that it would be difficult to find a more competent poultryman. We are anxious to have it understood, that we do not write with a view to persuading people to adopt our suggestions except when they are convinced that they can do so to advantage.

Do not neglect to turn the eggs which you are putting aside for hatching at least every other day. The fresher the eggs which are to be used for this purpose the better, but circumstances often compel the breeders to keep them for several weeks. When this is done it is important that they should be frequently turned to prevent the yolk from settling to one side and adhering to the shell.

Send us 25 cents for the MESSENGER.

SOME FAULTS.

The fact needs to be made better known that it is only a small per cent of the full blood poultry which is reared that is fit to compete for prizes in the show room. Many people when they first send for eggs with a view to keeping some breed of full bloods have very erroneous ideas concerning what they have a right to expect from their purchases. If the birds are in reality full bloods, according to the claims of the seller, then they think they should be practically free from blemish or defect, and even the worst of them be able to present a creditable appearance alongside of the prize winners of the show room. This is a wrong impression, and the sooner such people as we have above alluded to find that out the better it will be for them, and for those from whom they obtain their eggs.

The most competent breeders do not build any hopes of obtaining more than a bird or two from a brood of their best matings which they would care to place on exhibition. The most careful and skillful breeding in the world will never entirely eliminate the "culls." When people buy eggs they should understand that they are paying their money for a certain proportion of these culls, and be prepared to receive them into their flocks without making a wry face. If they have dealt with a competent and reliable dealer, they will get some good birds along with the bad ones which if properly handled will give them fair returns for their investment.

Breeders of full blood poultry are in a large measure responsible for these mistaken views on the part of amateur poultrymen. In their eagerness to effect sales, they lay great stress upon their prize-winning stock, and give encouragement to the idea that an abundance of the finest show birds are to be the fortune of those who become their patrons. They trick their customers into expecting too much. It would be best for all concerned if there was less of this sort of thing done, but so long as it is done, breeders are getting only what they deserve when their disappointed customers charge them with practicing a mild kind of deception for the purpose of creating a demand for their eggs. It may pay to conduct a poultry business upon this plan. It may attract more customers and bring in more dollars, but from the standpoint of right, it would be better for breeders to put a curb on the expectations of inexperienced poultrymen

whose hopes are naturally inclined to run too high. To even indirectly impose upon the confidence of these people, and take advantage of their inexperience, is to do something which is not altogether free from the savor of fraud.

THE BREED FOR TOWN.

Most people who are prepared to keep but one breed of poultry, and whose range even when the flock is given its greatest liberty, must be confined to the limits of a town lot, will find the large Asiatics better suited to their purpose than the smaller breeds. All things considered, a person so situated cannot do better than keep the Light Brahma. They are a quiet, docile, home-loving bird, and will stand close confinement better than any other breed. They can be kept in a thrifty condition in a small inclosure and by means of a fence which would be no bar to lighter fowls. For table use the Light Brahmas are not as good as the Plymouth Rocks or Wyandottes, but the difference between the breeds in this respect is not as marked as many suppose. A nicely roasted Brahma is not to be despised by the king or any of his subjects. The Light Brahmas are good layers. Though the writer's experience with them has been somewhat disappointing in this particular, we know that it was due to some mistake in the handling of the breed, and not to the breed itself. The Brahmas are excellent layers, as many of our acquaintances have demonstrated. The main danger to avoid in handling them is overfeeding. They are not inclined to take much exercise, and are easily made too fat.

We have been hearing for years that this fancy poultry craze was nothing more than a fad, that it would shortly wear itself out, and those who had put their money in such fowls would, to use a common street phrase, be "left in the lurch." But the craze don't seem to wear out worth a cent. Every year the ranks of the fancy poultry breeders are being swelled by the addition of thousands of new recruits, and there is no sign of the interest in fancy poultry declining. Any one who has an ambition to be a breeder of this class of poultry may enter the field without any fears that the business is going to be overdone. If he proves capable of producing anything worth having he will always be able to find a buyer for it at a profit.

A DURABLE FIRE-PROOF ROOFING.

Manufacturers looking for a durable and economical fire-proof roofing should investigate the merits of the "Eagle Brand Roofing," made by the Excelsior Paint and Roofing Co., 155 Duane st., New York. It costs less than shingles, and about half as much as tin or iron, and will last a lifetime in any climate. The base of the material is pure wool fiber, which being saturated with gum compounds and rolled under hydraulic pressure, produces a strong, compact and pliable water-proof substance, unaffected by sudden changes in temperature. The roof is completed by a coat of paint made by the company for this special purpose. In strength, durability and water-proof qualities it is guaranteed to excel all other brands. Its use is not limited to factories; houses, schools, barns, depots, etc., can also be permanently and economically roofed with it. Write for samples.

Don't neglect to mix a small quantity of sulphur in the feed for the hens at least twice a week. This is important, especially during the breeding season. It has been proven by a series of carefully conducted experiments that the addition of sulphur to the feed produces a marked effect in the direction of successful hatches. The use of sulphur in connection with poultry culture is somewhat old fashioned, but that it has virtues which commend it to the poultryman is beyond doubt.

The White Wonders are attracting more attention than is usually done by a new breed, and if all that we hear in regard to them is true, they possess some qualities which will cause them to become very popular. One thing in their favor is their northern origin. They are not affected by the cold as are the breeds which originated farther south, and it is said that they will become a favorite breed as winter layers. At any rate, they are evoking much interest, and those who now take steps for getting a start in the breed will have something which will be in somewhat active demand for a few years at least.

Do not feed bran to chickens unless it has been scalded. Fed raw it is liable to cause bowel troubles.

If you have had good layers the past winter, you will not be troubled for the want of setting hens this month. The good layers are usually ready to set as soon as winter is over.

DON'T BE FUSSY.

Breeders of poultry will do well to avoid forming a "fussy" habit in connection with the discharge of their duties to their flocks. A person can make himself a great deal more trouble than necessary by getting into such a habit, and their flocks will be none the better for it. We are not counseling carelessness. No reader can so far misunderstand us as that. But there is such a thing as getting into the habit of doing things rapidly and yet thoroughly, and then dismissing them from the mind with the feeling that the job is done. One breeder will fuss, and tinker, and dally around his coops the whole of a forenoon, and accomplish no more than his more systematic and better trained neighbor will do in a third of that time.

We do not regard it a good plan for the owner to be constantly among his fowls. He will become sufficiently well known to them if he is with them only long enough to do what is necessary for their health and comfort. Some of the breeds seem never to be entirely at their ease when anyone is moving about their coop, however quiet and gentle his manner. We believe that the Plymouth Rocks exhibit more nervousness under the circumstances than any of the medium sized breeds. In this particular there is a marked difference between them and the Wyandottes or the Langshans. It is a difficult matter to fully win their confidence even under the kindest treatment. This is one of the small faults of a breed which enjoys a wider popularity than any other in the standard.

We are of the opinion that a breeder can spend too much time in the coops of his fowls, though we know that there are many competent poultrymen who hold to the opposite belief.

You have no right to abuse a hen simply because she wants to set and you do not want her to. And you don't accomplish a thing by doing it. Put her in a small coop to herself without any nest, keep her there for a week and she will be ready to go to laying again. Or the same end can usually be accomplished by putting her in another yard where all the surroundings are new to her.

A large number of people are firmly rooted to the idea that notwithstanding all the improved methods of poultry-keeping, there is nothing which beats giving the chickens the run of your neighbor's garden.

HEN-SENSE.

It is not always safe to go on the presumption that a hen has got even good ordinary hen-sense. It seems to be generally understood that the height of stupidity is reached in any animal which doesn't know enough to go in when it rains, and the intelligence of the hen does not go beyond that point. About everybody has seen the hen squat down in a perfectly open space with her brood on the approach of a heavy rain storm, when good shelter was in plain sight, and only a few feet distant. A hen will show no more sense than that in many other things, and it is scarcely ever safe to allow her any "discretionary powers," and expect her to make a wise use of them. One day recently we placed a hen and her brood in an unoccupied poultry house in which there had been left a nest box standing about a foot from the floor. In making our rounds of the yards at nine o'clock in the evening we glanced into this poultry house as a matter of habit. We found the hen on the nest and her newly hatched brood huddled together in a corner of the room. But for our visit the chicks would all have been dead before morning. A hen will sometimes surprise you by showing more sense than you gave her credit for, and then again she will make you weary with her idiocy. But don't trust her. Don't look for her to get her family under cover from the storm without your help, and calculate that in many other ways your assistance will be needed to keep her right. Interfere with her as little as possible, but know that your interference will often be necessary. It will be found that it is a losing business to rely too much on the hen's instinct.

If you know which were your good layers during the past winter, now that we are in the midst of the hatching season, you can easily arrange to have just as good or a better laying flock next winter. If you have not hit upon any plan of distinguishing between your good and bad layers, the egg question with you next winter is an altogether uncertain one. No matter what your houses are, or your mode of feeding, you will not get the quantity of eggs which you might have obtained as the result of a careful selection of the best layers for breeders.

Cooked food is best for young chicks. Never dampen the meal with cold water. At least scald it.

BUY AN EGG TESTER.

Any poultry breeder is standing in his own light by not providing himself with an egg tester. It is thought by many that an egg tester is of no practical use to any one but to those who hatch by artificial methods. The tester is just as servicable to the person who hatches by means of hens as to him who uses an incubator.

It is seldom that all the eggs which are placed under the hen are fertile, as every breeder of experience knows. The sooner that those which are not fertile are removed the better, as their presence only crowds the nests, and to some extent lessens the chances of obtaining a good hatch from those which should remain. With the aid of a tester the eggs which are not fertile can easily be detected on the eighth day. There is no mystery or difficulty about it. Any person can distinguish between the two kinds at a glance. Where a breeder is pinched for the want of setting hens the tester will materially help him out by enabling him to accomplish the same results with a less number of hens. Three settings of eggs will often test out enough to permit of what prove fertile being placed under two hens, and the third hen can then be furnished with a new lot. This can very frequently be done in late winter or early spring when the eggs are fertile in smaller proportion than a month or two after.

An egg tester as good as any ordinary poultryman needs to have can be bought for fifty cents. A person with any skill or ingenuity can manufacture one without any cost whatever, but if time is any object, it hardly pays to do this when they can be bought for so little money.

The high-priced eggs often do not hatch as the buyer thinks they ought to, and this is apt to give rise to a suspicion that he has not been fairly dealt with by the party who sold them. An old breeder in writing on this subject truthfully says:

"Judicious feeding and care of the breeding stock and the brood hen as well as careful handling and packing eggs for shipment, is all the breeder can do, and doing this he can conscientiously feel that he has treated his patrons honorably."

During the first week of their lives feed the chicks five times a day, and be sure that no sour or mouldy food is left where they can get to it.

The Poultry Messenger,

AND

Western Fruit-Grower.

Published the first of every month by
The Messenger Company,
AURELIA, IOWA.

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ADVERTISING RATES.—Sixty Cents per inch, each insertion. Contracts under these rates will be limited to six months.

Breeders Cards.—Set in plain type, without display, one cent per word each insertion. No advertisement inserted for less than 25 cents.

Short, pointed communications on any topic related to either poultry-keeping or fruit-growing, are always acceptable. Write plainly, and on one side of the paper only.

We will gladly make space in the MESSENGER for communications from readers who have anything which they want to say on the subject of poultry or fruit culture. We only ask of them not to write merely for the purpose of filling space, but put forth some practical idea or suggestion which will be helpful to somebody. It may be a hint seemingly of a trifling nature, and hardly worth putting on paper, but if it is something of practical use, and new to the common run of poultrymen, we would be pleased to have it written up for our columns. Some of the little conveniences about our poultry houses to which we attach the greatest value, and which we have come to regard as almost indispensable, were first suggested to us by persons who never thought of being considered an authority on matters pertaining to poultry raising.

Then there are poultry-keepers who believe that they have an idea or two worth giving to the public, but not being accustomed to writing for the papers, they are not quite sure of their ability to put what they want to say in readable shape. We want to say to such persons that if they have a clearly defined idea to start with, and will sit down and write it out in the plainest words which they can think of, making use of the same language which they would employ in conversation with an acquaintance, the wording will be good enough for the papers. He who writes in this way will always write well.

Our regular staff of writers is fully competent to fill up the pages of the MESSENGER, and we do not solicit outside contributions with a view to sav-

ing them work. But many of our readers are in possession of facts relating to poultry-keeping which these writers don't know, and which are known to but few others than themselves. We want to lay these things before the large family of readers which we are gathering about us. Send them in to us in the best shape that you can, but send them in in any shape, and it will be seen to that the copy is properly smoothed up before it goes into the hands of the type-setters.

If eggs for hatching purposes are well packed the express companies should be able to carry them across the continent without breaking them. It is difficult to escape the conclusion that the express companies are not always as careful with the eggs intrusted to their care as they might be. They are paid high rates for giving the most gentle handling to this class of goods, and yet the package frequently arrives at its destination with half the eggs broken. And this cannot always be charged to imperfect packing. We know this has been the fate of packages shipped the present season by people who have been in the business for years, and who understand how to pack the eggs if anybody does. The fact is the express companies could save breeders this loss if they were really as anxious as they ought to be to earn the money which they receive for doing this work.

The DeKalb Fence Company places an advertisement with us this month. Those who want a fence heavier than the ordinary poultry netting, something which will keep poultry in bounds and also resist the attacks of a horse or a cow, will find nothing better than the cabled fencing shown in this company's advertisement on our first page. The DeKalb company also manufactures several different styles of fencing for lawns, and for general farm use. Write for their catalogue.

Every breeder of fine poultry needs printed stationery. A breeder is practicing a very poor kind of economy who does his business correspondence on plain paper. It will cost him the loss of many a sale to the best class of buyers. These buyers are apt to conclude that a poultry business which cannot afford printed stationery does not amount to very much. Such a conclusion may be wholly wrong, but a breeder cannot afford to tempt others to think that way for the little that he saves by the use of unprinted stationery.

Please send us on a postal card the names and addresses of a few poultry breeders of your acquaintance. It is a small favor which we ask of you. We wonder how many of our readers will respond to this request.

We have about concluded arrangements for a monthly article by the well-known writer, O. P. Greer, of Indiana. Mr. Greer's articles will be on the line of hints to beginners, and will be of value not only to beginners, but to old hands at the business as well. We hope to receive the first article of the series for our June number.

Don't be shy about advertising in a poultry paper simply because it is a new venture. The new paper often finds its way into as many hands as those which pride themselves on their age, and, where this is not the case, the difference in rates fully makes up for the difference in circulation. If any poultryman ever lost a penny by advertising in any paper it was not the fault of the paper.

Those to whom this number of the MESSENGER is sent will understand that it is intended as an invitation to them to subscribe, if they have not already done so. It is "hard sledding," this thing of trying to get a new publication of this character fairly started. We judge that we have had as much encouragement as others who have undertaken the same kind of a job. But we need names, and lots of them. Send us the quarter, you will not miss it. Send it the day that you read this, the matter may escape your mind if you put it off. We believe that there is a place for the kind of a paper which we are trying to publish. Help us to occupy it. You can afford it, and you will not regret it.

If a person is disposed to play the rascal, the poultry business offers excellent opportunities for doing it. An advertiser is wholly dependent upon the honesty of the breeder when he orders a setting of eggs of him. He does not see the goods for which he pays his money, and relies altogether upon the word of the seller as to whether they are worth what is asked for them. It must be said to the credit of the fraternity that there is very little abuse of the opportunities which a business conducted upon this plan offers for fraud. We speak what we believe to be sober truth and intend no flattery when we say that no other class of people would take advantage of such opportunities to commit wrong in less degree than poultrymen have done.

THE WESTERN Fruit Grower

TOP-WORKING.

BY J. WRAGG, WAUKEE, IOWA.

Ed. MESSENGER:—I take pleasure in complying with your request inasmuch as I believe as the result of my long experience that intelligent "top-working" will prove the surest immediate process by which we may obtain a supply of our best apples, and on such hardy stocks as experience has taught us are abundantly able to withstand our trying climate. The following varieties are found to be hardy in all parts of Iowa, with the possible exception of the Haas in the extreme northwest. Haas, Hibernial, Virginia Crab, Whitney No. 20—on these as stocks, such fine and well-known apples as Early Joe, Dyer, Jonathan, Grimes Golden, Red Winter Pearmain and other of our choicest fruits can be grown with both pleasure and profit.

The plan of top-working that I advise is different from that practiced by those horticulturists who grow such trees for sale, as it involves more work but which I think defeats its own object. The common plan is to place a single graft or bud on a two-year-old "whit" (a tree without branches.) It will be readily seen that by this process the entire top including the forks will be of the tenderer variety. And right here is where I think that the object of top-working is defeated in a large measure, for my observation and experience teaches me that the forks are the tenderest part of the tree. True it is easier to put in one graft than three or more, but I have always believed in the principle that "the best way is the right way." My plan is as follows: Set straight, thrifty whips, and from the top at such distance from the ground as you prefer, encourage the growth of at least three branches or more in such position as will in the future form a "well-balanced" top. The next year, if the branches are well grown and large enough, put in a cion or graft in each branch about four inches from the trunk. By this mode it will be readily seen that the forks or most susceptible part of the tree to the vicissitudes of our climate are of the hardy stock. In my own work I prefer budding to grafting, not that it is any better, but it is done at a time of year when there is more

leisure than in the spring. It is a very simple process, and if it does fail in part the branch is not injured and a graft can be put in the following spring. All the branches of the tree should not be cut off at once as a tree must not be entirely denuded of its leaves in the growing season. After the grafts or buds are set and are safely growing, gradually remove the surplus branches, part the first year, the remainder the second. Top-work may be done the present spring by using for stocks thrifty, well grown three-year-old trees with the tops already formed, selecting such as will permit of at least three grafts, but cions should be used that have been cut before any growth took place. Grafting and budding can be taught on paper but it is unsatisfactory. In most neighborhoods there is some one who understands these methods, and fifteen minutes instruction with practical illustration by knife and branch of a tree is worth a whole written treatise on the subject to a new beginner.

NEGLECTED ORCHARDS.

BY AN OLD SETTLER.

If the half of the orchards which have been planted in northwestern Iowa since the first settlement of the country were in a healthy growing condition, they would be furnishing a supply of apples more than sufficient to meet the home demand, at least for summer and fall varieties of the fruit.

The few orchards which were set out twelve years ago and over, and have been properly cared for, are now a source of considerable profit to their owners. As but little was positively known at that early day concerning the varieties best adapted to the locality nearly all of these orchards contain trees which bear no fruit. Orchard- ing was then an untried experiment, and as a natural consequence many varieties were attempted which it has since been shown are unsuited for coping with the conditions which they here meet with. But the few hardy sorts which were available at that day are now giving ample return for the labor and care which have been bestowed upon them. If even the half of these hardy sorts which have been set out could have survived the neglect and hard usage to which they were subjected, the northwest would now have summer and fall home-grown apples in abundance.

But a large proportion of the or-

chards which are set out here as elsewhere are destroyed before they attain the fruit bearing age. They are often left exposed to the ravishes of horses or cattle or whatever else may be running at large. At the time the trees are planted the owner fully intends to surround the plat of ground with a good fence, but other farm duties are pressing hard upon him, and the building of the fence is postponed from week to week. Meanwhile the cattle have been browsing upon the young trees, and one day he awakes to the fact that what remains of his orchard is not worth the cost of the fence required to give it protection from further injury of this description.

This man's neighbor across the way shows better management in connection with his attempt to grow an orchard. After the trees are planted he loses no time in building the fence. Perhaps he has it all done before the trees are brought within the inclosure. He has given some study to fruit-growing, and does not indulge in any guess work regarding the best varieties to plant. He knows too that the work is not done when the trees are set in the ground, but that a certain amount of labor must be expended upon the trees every year if he would keep them in a healthy and thrifty condition. Of course the orchard is a promising one, it could not be otherwise under such treatment. But unfortunately after a few years this man sells out. The buyer doesn't know anything about fruit-growing and don't want to learn anything about it. He believes in hogs. Everything about the place which does not directly contribute to hog farming must go. And the orchard is soon gone.

But perhaps the farm is not sold, but only rented, the owner like so many of his class moving off the premises and making his home in the adjacent village. The tenant faithfully promises not to pasture his stock in the orchard, but his promise is not kept, and, perhaps, was not intended to be kept when he made it. The man who takes his place the next season does no better, and so it goes from year to year until there is nothing left of the orchard but an unsightly wreck which is an eyesore and a disgrace to the place.

This is the fate of a large proportion of the orchards which are started with much labor and expense to somebody. They are either overrun by stock and destroyed, or meet with such neglect that they never amount to anything. The remnants of such orchards can be

seen everywhere in the northwest, the scarred trunks and misshapen branches testifying to the hard struggle which the trees have had to outlive the rough usage which they have received.

The man who owns a farm and expects to make a home there should regard the setting out of the orchard as one of the first things to be done, and then he should register a resolve to take care of it as long as he is so situated that he can give it his personal attention.

The orchards of our part of the west will be better treated in the future than they have been in the past. It has been found out that they can be depended upon to produce good fruit and abundance of it. This fact will in time be impressed upon the dullest comprehension, and the orchard will be cared for because the lesson has been learned that it pays to do it.

LOW BRANCHING TREES.

A nurseryman who would grow his trees so that they would branch a foot from the ground would probably hear something unpleasant from the majority of those to whom the stock should be sent. And yet there are many advantages in favor of such trees over those of higher stems. They are not beaten about so much by the wind; they are easier to spray, and when they come into bearing condition the fruit can be gathered with half the labor required to pick it from trees branching six or eight feet from the ground. The low headed trees too are less subject to sun scald. This is perhaps the strongest argument in favor of such trees in the northwest where the effects of sun scald are much more serious than in most other parts of the country. The many advantages of trees of this description are fully understood by nurserymen, but they are compelled by the demands of the trade to go against their judgment in the growth of stock intended for sale to the general public.

In the orchards of the eastern states the branches of the trees are usually high enough from the ground to permit a person to pass under them while sitting on horseback. When eastern people, accustomed to the sight of trees of this kind, make a journey to California, it seems very odd to them to see the fruit trees there branching down close to the ground. A nurseryman there could not find sale for trees different from this.

We also learn from men who have traveled in northern Europe that the

same thing is true with respect to the greater proportion of the fruit trees in that part of the world. Some of the best varieties of cherries which are produced in Russia are grown on trees which in general form closely resemble that of an overgrown currant bush. According to Professor Hansen, of this state, who has recently been traveling in Russia, the delicious Vladimir cherry which is produced in such large quantities in the neighborhood of Moscow, is grown on trees of this description.

There is not a single practical advantage to be gained by planting orchard trees with high stems, and fruit-growers everywhere are becoming convinced of that fact. In a decade or two more the practice of planting such trees will be almost entirely discontinued.

STRAWBERRY PLANTS.

How few of us know what can be done by good culture! And yet, what is better worth knowing? A grower in Massachusetts bought one plant of the Marshall in the spring of 1893, when that variety was worth \$10 per dozen. In a year from that time he sold 300 and had some left for his own planting. A friend near Dayton, Ohio, sent out one plant of the Staples from which he raised 900 the same year. The next season he picked 134 quarts of berries, but I cannot tell how many of the plants were left to bear. In the spring of 1893 I received twelve plants of the Brandy wine for trial. Each one was taken up with about a pint of earth, and tied in a piece of cloth. These bore fine berries within ten weeks of planting, after which they made runners enough to set a row 400 feet long in August. Still later, they made nearly 1,000 plants, which were set out this spring. All this in a very dry season, with simply good, common culture.

Any careful grower might easily take a dozen plants in the spring and plant them eight feet apart in a row 100 feet long, and have a solid bed three feet wide in the fall. This would require some fussing and that is good for most of us.—M. Crawford, in Rural New Yorker.

I do not want trees which lean to the northeast. Many of the Russians lean but little. It is a test of hardiness. Leaning is not the cause of injury so much as the effect. The tree leans because it is injured. It leans away from the injury.—R. P. Speer.

IN HILLS OR ROWS.

It seems to be conceded that larger and better strawberries can be grown in hills than in matted rows, but the majority of growers are of the opinion that the difference in size and quality does not pay for the difference in labor in the two methods of cultivating them. The matted row system is the one almost exclusively followed by those who grow the berries in large quantities for commercial purposes. It may pay to cultivate in hills where one has a custom which he can depend upon to pay above the ruling prices for quality, but if he has to take his chances with the rest of the offerings on the market, it will seldom be profitable. Many people prefer the hill system for family use, and where the berries are grown only with this object in view, and one has the opportunity for performing the extra work, it is certainly preferable to the rows. All things being equal, the berries will be both larger and better flavored; there is no question as to that.

Where it is the intention to keep the plants in hills, the labor of attending to them will be much lessened if some variety is selected which throws out but comparatively few runners. The Parker Earle is very popular with those who follow this system, and there are other varieties which make even fewer runners than this. Any nurseryman can furnish all the information desired regarding the varieties best suited to the different methods of growth.

KEEP THE RASPBERRIES AWAY FROM THE FENCE.

It is a common practice with people who come in possession of only a dozen or two raspberry plants to set them out alongside of a fence or building, and in a few years there is a regular wilderness of bushes there, but no berries to speak of. Raspberry plants should always be set in an open space where they can be cultivated from all sides, and kept within proper bounds. When they are allowed to get into a tangled clump they are not profitable, and, besides, they give a very untidy appearance to the grounds when in this shape.

Many Iowa fruit growers have publicly declared that the dewberry is not worth cultivating.

All small fruits will do better in our climate if given some winter protection. A crop will be obtained without it occasionally, but it will oftener fail for want of it.

HOW AND HOW NOT TO GROW
EVERGREENS.

BY M. PARROTT, AURELIA.

If a hundred men were asked if they were fond of evergreens, I will venture to say that one hundred per cent of them would answer in the affirmative. Well, then, if you like evergreens why don't you grow them? The answer to this often is that "we have tried to do so and failed." But why have you failed? Can you grow corn? I venture to say that you can grow an evergreen as easily as you can grow a hill of corn provided you plant it on good corn land, and cultivate the same as you would corn. But the average man will buy of some apple tree agent, who knows no more about evergreens than a ten-year-old boy, pay him an exorbitant price, plant it in the front yard or along a fence line where the blue grass has predominated for years, and expects it to grow. And if it don't grow he declares that he will never attempt to grow any more evergreens.

The way to grow an evergreen is first to select some good responsible evergreen grower, and there are many such in Iowa, get his prices, order your trees and when they arrive be careful and not unpack in wind or sun, nor until you have thoroughly saturated the roots with water. Place at once in water or muddy puddle, never allowing the roots to be exposed for a moment, and when ready to plant lift them directly out of the water into the hole where you intend them to remain. If the ground is ordinarily wet give them no water, if dry, a little water is beneficial. Cultivate and keep clean the same as corn, and they are as sure to grow as any other tree. The main secret in handling evergreens is to not let the roots become dry. The sap is resinous, the roots very fine and fibrous, and when once allowed to dry water will not soften it, and the result is death to the tree.

If you desire to plant in sod, or where the ground is not cultivated, remove the sod to the depth of eighteen inches and five or six feet in diameter. Then fill up this hole with good cultivated soil, plant your tree, keep soil thoroughly pulverized on top, allow no sod to form within three feet of the tree, and you can in this way grow an evergreen in the sod.

Do not water an evergreen under any circumstances, except when planting, if ground is very dry, as above stated.

After the tree is planted it is always injurious to pour water about it. Cultivate instead. The writer made an actual test of the effects of watering the past dry season, and in nearly every case it was fatal, while those which were not watered came through all right.

While the past dry season was very unfavorable to newly planted trees, those which had been set previous to that time and had become well established, came safely through, but with less growth than in other years.

Do not buy a seedling, unless in an experimental way, for they are much the dearest tree in the end, though at first seemingly cheaper. I presume there are a great many people who do not know the difference between a seedling and a transplanted tree. A seedling may be two or three feet high, and can be sold very cheap, because it has cost the grower nothing for transplanting, while a transplanted tree much smaller would cost two or three times as much. A seedling has but few roots which are quite coarse, while the transplanted tree is well supplied with roots which are fine and fibrous.

As to the kinds which are best for general planting, we think the Platte Valley Cedar and the White Pine have no equals. For ornamental planting any of the conifers are good. The Black Hills and White Spruces are the neatest and most compact of any of the spruces which I have had anything to do with. While the Colorado Blue Spruce is the most costly, I have never yet seen it growing in all the beauty which is claimed for it. I have a few specimens of small growth, but fail to discern its superior beauty over other kinds.

The rascally tree peddler richly deserves all the abuse which is heaped upon his dishonest head. But ignorance, carelessness and neglect on the part of his customers are about as much to blame for the failure of orchards as he is. The old-fashioned, swindling tree agent would soon lose his occupation and drop out of sight if those who buy his trees would try to acquire a better knowledge about orcharding, or would put what they know to practical use.

The space between the rows of the raspberry or blackberry plants the first year can be utilized by planting to a row of potatoes, or early sweet corn.

GROWING CUCUMBERS.

Those who are only acquainted with the growth of cucumbers, in large tracts, where they trail upon the ground, can have no idea of the extraordinary vigor that they show when growing over small trees or twiggy bushes; an enormous increase of fruit is the result. This cannot be carried on to any great extent where the cucumber is grown extensively as a farm crop, because of the difficulty of getting strong, stout brushwood on which to train the plants. One could not store up brushwood in advance for this purpose, it would not be profitable perhaps; but in a garden where only some dozen or so of plants are required it is an excellent practice to have stout, bushy branches planted, as one would a bean-pole, on which to allow the cucumbers to run. One may get as many cucumbers from one plant so trained as from a dozen suffered to trail over the ground, besides the advantages of the plants occupying less space.—Meehan's Monthly.

We are advised by old fruit growers to spread whatever fertilizing material we have to apply to the blackberries and raspberries between the plants and not in the space between the rows. When the manure is put between the rows it encourages the growth of roots in that direction, and the roots when in that space are liable to be greatly injured by the cultivator.

Peaches can be grown anywhere in Iowa by laying the trees down and covering them in winter, and it is not such a job to do this as people are liable to suppose. It would pay anyone to do it whose aim was to raise only enough peaches for family use.

Black raspberries may be planted in young orchards, and the plants will do better than if planted in an open space by themselves. Some shade is an advantage to the raspberries, and the first eight or ten years of the orchard's life will supply just about enough of it to keep the berry vines at their best. One row of the berry vines can be planted in each tree row, but the rows on either side of this should not be closer than eight feet. The cultivation which will be required for the berries will also be good for the trees, and so far as this part of the work is concerned, the needs of two kinds of fruit can be attended to in the same time required by one. Those who have adopted this plan of growing raspberries, have not been able to discover that the presence of the vines is in any way a detriment to the trees.

TOO CHEAP.

When a person buys fruit trees or nursery stock of any kind it is not always good economy for him to have too much of an eye to cheapness. People who do this are not always satisfied with what they get. Cheap nursery stock is apt to be very expensive in the end.

A certain amount of labor and expense are required to grow a tree in the nursery to the age of two or three years, and have it ready for delivery in first-class condition when the purchaser calls for it. If no regard is paid to quality trees can be produced very cheaply, but if they are grown in an honest way, and represent the experience and knowledge of a competent nurseryman, they must sell for enough to pay such men for their work, or else such men must go out of the business.

Those who are not acquainted with the process by which evergreens are grown to a marketable age and condition, are inclined to think that nurserymen ask too much for stock of this kind. It is troublesome to grow an evergreen and grow it right. They demand the most tender nurture at the beginning, and after this frequent transplantings are required to properly fit them for removal to the places which they are to permanently occupy. A good deal of this labor, so necessary to the health and vigor of the trees, can be dispensed with, and the ordinary purchaser will be none the wiser. And this is frequently done. Evergreens can always be obtained for about one-half what a reliable local nurseryman can afford to grow them for, and to an inexperienced eye they are just as good as the more expensive trees. Such stock is picked up in large quantities in the pineries, or is produced in violation of all accepted rules in the quickest and least expensive way, solely with a view to attracting customers by its cheapness. It does not pay to buy evergreens of this class. In the end they are more expensive than good trees. The buyer may succeed in getting a certain proportion of them to grow, it is true, but they are inferior stock to begin with, and they will never get over showing it.

It may be set down as a rule that cheap nursery stock of any kind is the most costly thing for which a man can pay out his money. It does not follow that the most expensive goods of this description are always the best, but there is a certain standard of prices which is a close approach to those

adopted by all reputable nurserymen, and it is never safe to pay out money for stock which is sold for a price much below this. This is the sort of mistaken economy which causes a man to throw away dollars for the purpose of saving pennies.

HUBBARD SQUASHES.

Don't plant your Hubbard squash seed before the first of June. By so doing you will have better squashes at the cost of considerably less trouble than if the planting was done early in the spring.

The squashes are all of a tropical habit, and though many of them can be grown successfully in the far north, there is nothing gained by planting until the ground is warm. The people of the north were a long time finding out this fact, and many of them still doubt the propriety of putting in the seed at such a late date as we have suggested. They are of the opinion that the season is barely long enough to mature the crop even when the seed is planted as early as the ground can be got ready to receive it. Under the earliest planting which can be made, they find the crop in an unripe condition in the fall.

The Boston market for Hubbard squashes is largely supplied by growers in northern Illinois and southern Michigan. Large fields are there to be seen planted to this crop, and immense cellars have been fitted up for the storage of the squashes. It is the rule among the growers not to plant the seed before the first of June, and even the fifteenth of the month would not be considered very late planting. The ground is then warm, the striped bugs are about out of the way, and the plants make a rapid growth from the start. If the reader doubts that the first of June is the best time to plant the Hubbard squash, let him experiment this season with a few hills and compare results with plantings made in April or May.

An acre of ground devoted to the culture of small fruits ought to produce an annual income of at least two-hundred dollars. This seems like a large sum for the use of one acre of ground, but those who make a business of growing small fruits are disappointed when the returns go much below this. It must not be understood that this is all profit, though instances could be given where persons right here in northern Iowa have in one season reaped a clear profit of two-hundred dollars and over from an acre of strawberries.

WORTH REMEMBERING.

It is quite well known that plum trees should be planted in clusters, and the reason for so placing them is generally understood. In a given number of trees some of them will be deficient in fertilizing properties, and will bear no fruit if placed in isolated situations. But if these trees are placed in a group they will be fertilized by the superabundance of pollen from some of the other trees of the group, and if not subject to any other fault than the one named, may prove as fruitful as any of the cluster.

This law, by which nature manifests her repugnance to the self-fertilization of plants, has a wider influence than many of us suppose. It is now advised by the best informed horticulturists that in putting out an orchard of apple trees all possible care should be taken to intermingle the varieties. It is a common custom to place each variety to itself, Oldenburg, Wealthy, Longfield, each occupying a separate section of the orchard. This method is now condemned by most of the best authorities. The different varieties should occupy alternate rows, which will tend to equalize the distribution of pollen over the orchard. The varieties which are lacking in fertilizing properties will in this way be supplied by those of greater potency in this direction, and even if there is no deficiency of pollen, it to a large extent gives avoidance to the self-fertilization of the trees. This fact is well worth bearing in mind by those who are preparing to plant new orchards the present season.

Many of our best Iowa horticulturists are advising people to plant more of the Oldenburg apple, claiming that there will be an immense demand for it in future. The Oldenburg is a winter apple in cold storage, and it has been proven that it possesses superior keeping qualities under that process. It is perfectly hardy in all parts of the northwest, and on many accounts is considered the apple which will return the best profit to fruit growers throughout the greater part of the northwest.

Experienced Iowa horticulturists contend that methods of pruning apple trees generally followed in the eastern states would in the majority of cases cause the loss of the tree in the west. In one instance, as a matter of actual experiment, five trees were pruned according to the approved eastern method and by a competent eastern horticulturist, and four of them died.

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